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JOINT PHOTOGRAPHIC INTELLIGENCE MEMORANDUM

PROBABLE RADAR INSTALLATION NEAR KRASNOVODSK, USSR

[redacted]

ARMY CIA NAVY

HTA/JM-4/57
19 NOVEMBER 1957

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PROBABLE RADAR INSTALLATION NEAR KRASNOVODSK, USSR

HTA/JM-4/57

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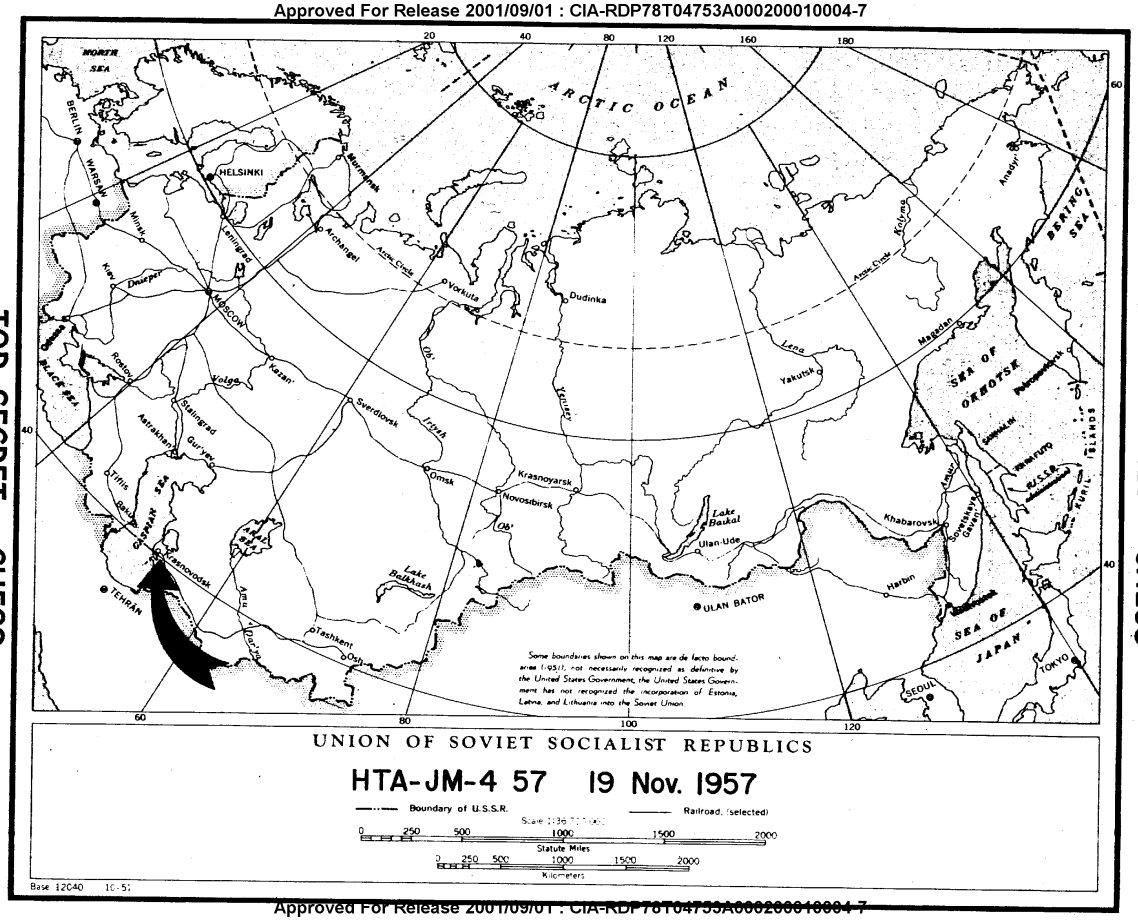

HTA/JM-4/57

PROBABLE RADAR INSTALLATION

NEAR KRASNOVODSK, USSR

Introduction

This memorandum presents a preliminary photographic analysis of a new-type probable radar installation, containing a very large and unique antenna structure (see accompanying sketch and approximately 40-times blowup). It is located approximately three nautical miles northwest of Krasnovodsk, USSR at 40°02'26"N/52°57'13"E. This analysis has been prepared at HTAUTOMAT by CIA, Army, and Navy, under Army chairmanship. Coverage is provided by ex-

25X1D

[redacted]

A large mattress antenna, a probable feed mast, and a tall lattice tower are the primary structures located within a fenced area measuring 915 by 615 feet, which is situated on relatively high ground. Vertical dimension of the mattress antenna is about 115 feet; its linear dimension is roughly 360 feet (see annotated drawing for other dimensions). Its size can best be visualized by comparing it with the 160 by 300 foot playing area of a football field. Several related support facilities are also evident within the area.

Description of Installation

1. Mattress Antenna

The most prominent structure of the installation is a mattress antenna with two large vertical sections joined at approximately

a right angle (105°) that form an " ⌐ " shaped configuration when viewed from above. The longer section of the antenna is slightly curved and measures approximately [redacted] in length. This section probably represents a portion of a paraboloid. The shorter antenna section measures [redacted] feet long and is straight. Both sections stand approximately 115 feet vertically.

25X1D

25X1D

2. Probable Feed Mast

A tall lattice-type mast, measuring 110 feet high and 30 feet across at the base, is located adjacent to the straight section at a point approximately 70 feet from the junction of the two sections. An extension of a line paralleling the mast base is oriented along an [redacted] Mounted on the mast are several unidentified objects that are probably radiating elements, possibly feed horns. A line extended from the center of the mast base to a point perpendicular to a tangent (with 90° angles of incidence) of the paraboloid antenna section gives a reflective directivity of [redacted] Other lines extended from the probable feed mast to various points along the paraboloid antenna give reflective directivity azimuths ranging from [redacted] This slight variance in directivity may result from a slight error in computation and it is entirely possible that all reflective azimuths are parallel.

25X1D

25X1D

25X1D

25X1D

The structural frame of the paraboloid antenna section consists of nine vertical members spaced at approximately [redacted] intervals. The frame of the straight antenna section consists of four vertical members evenly spaced at approximately [redacted] intervals.

25X1D

25X1D

A single vertical member is located at the junction (vertex) of the antennas.

Both the paraboloid and straight antenna sections consist of 25X1D five horizontal frame members which are evenly spaced at [redacted] 25X1D intervals, with an [redacted] separation between the base and the bottom horizontal section of the array.

3. Lattice Tower 25X1D

A tall lattice tower, approximately [redacted] in height, is 25X1D located [redacted] east of the antenna. The tower has a square base and 25X1D measures [redacted] on each side. A cable line leads from the tower area to a square bunker-type building (building X) adjacent to the straight antenna section. From this building, another cable line leads directly to the feed mast. 25X1D

4. Probable Bases for Guy-Wire Supports

Fourteen linear earth mounds, averaging [redacted] in size, radiate from the base of the antenna to the rear. The tops of the mounds have what appear to be possible bases for anchoring antenna support guy wires.

5. Possible Ground Reflector

A long narrow wall-like structure, probably earth mounded, is situated approximately 300 feet west of the paraboloid antenna section. The wall is oriented along an approximate north-south 25X1D [redacted] and averages 5 feet in height.

The length and relative location of the wall indicate that a direct relationship exists between the wall and the functioning of the

antenna system. It is possible that the structure constitutes some type of ground reflector.

6. Support Buildings

Four main support buildings can be identified within the security fenced area of the Krasnovodsk installation. All are located in the south or east quadrant of the installation behind the antenna. A fifth building, probably a guard or security structure, is located at the entrance to the installation along the northern fence perimeter.

25X1D

Building W - Hip-roofed structure, [redacted], located at base of lattice tower. A cable line leads from this building directly to Building X.

Building X - Square-shaped, flat-roofed, bunker-type structure, 55' x 50', situated to the rear (south) of the straight antenna section. Has a cable line connection with the feed mast.

Building Y - Flat-roofed structure 45' x 25'. 25X1D

Building Z - Small gable-roofed building, [redacted] represents terminal of power line leading to installation from the east.

Several smaller buildings and guard shelters are also evident in the area.

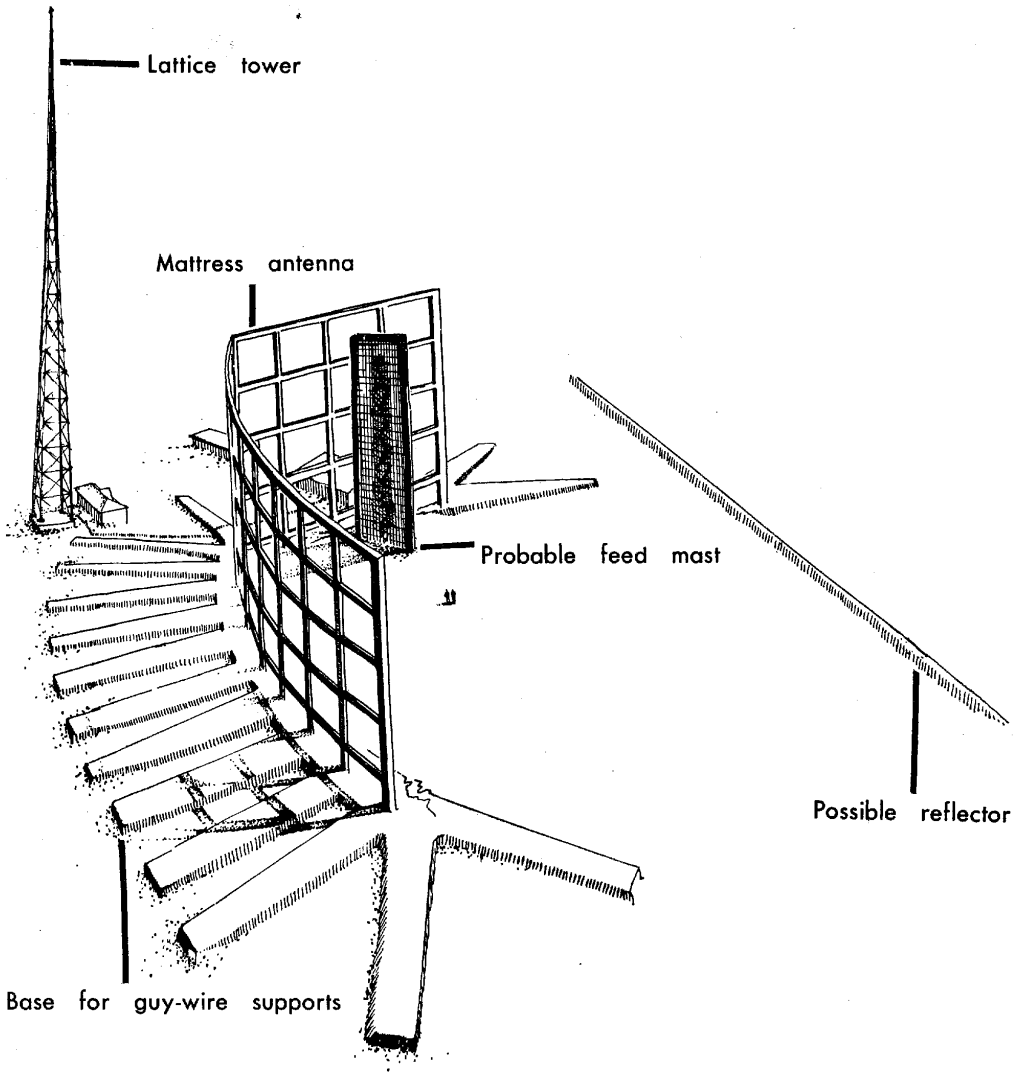

Figure 1 Preliminary sketch of probable radar installation near Krasnovodsk, USSR

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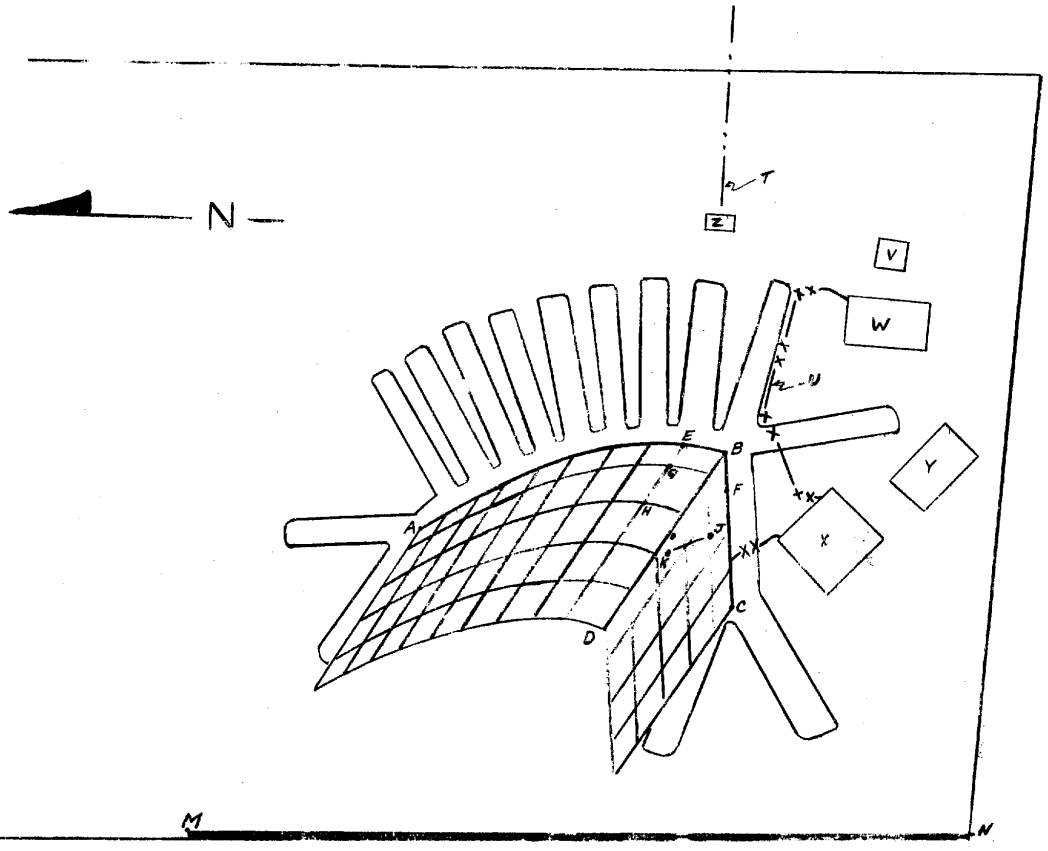

25X1D

Distance AB [redacted] (length of paraboloid section)
" BC [redacted] (length of straight section)
" BD [redacted] (over-all height)
" BE [redacted] (approximate separation of vertical members - paraboloid)
" BF [redacted] (approximate separation of vertical members - straight)
" FG [redacted] (separation of lowest member from base)
" GH [redacted] (separation of horizontal members)
" JK [redacted] (width of feed mast); 110' (height of feed mast)
" MN [redacted] (length of probable reflector wall)
" BV [redacted] (vertex to tower)

Item T Power line
" U Cable Scar
" V Lattice tower, base [redacted]
" W Building, [redacted]
" X Building, 55' x 50'
" Y Building, 25' x 45'
" Z Building, [redacted]

25X1D
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